

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
13 May 2004 (13.05.2004)

PCT

(10) International Publication Number  
**WO 2004/040722 A1**

(51) International Patent Classification<sup>7</sup>: **H01S 5/068**

(21) International Application Number:  
PCT/IE2003/000148

(22) International Filing Date: 30 October 2003 (30.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
S020846 30 October 2002 (30.10.2002) IE

(71) Applicant (for all designated States except US): **INTUNE TECHNOLOGIES LIMITED** [IE/IE]; 9C Beckett Way, Park West Business Park, Dublin 12 (IE).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **FARRELL, Tom** [IE/IE]; 9C Beckett Way, Park West Business Park, Dublin 12 (IE). **MCDONALD, David** [IE/IE]; 9C Beckett Way, Park West Business Park, Dublin 12 (IE). **MULLANE, Thomas** [IE/IE]; 9C Beckett Way, Park West Business Park, Dublin 12 (IE).

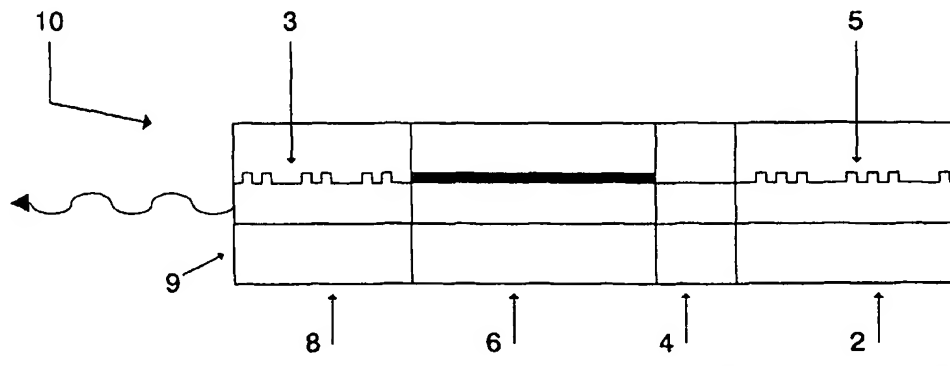
(74) Agents: **LANE, Cathal, Michael et al.**; Tomkins & Co., 5 Dartmouth Road, Dublin 6 (IE).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR COMPENSATION OF DEGRADATION IN TUNABLE LASERS



(57) **Abstract:** The invention provides a method to compensate for degradation in a tunable laser and ensure its performance by tracking the degradation and adjusting the control information accordingly. This is accomplished by performing some measurements of the output of the tunable laser at an initial setup or calibration procedure. Then, by effecting a periodic repetition of these measurements and using a comparison between these two measurements the present invention provides for a compensation factor for the operating conditions, primarily in the form of a look up table of operating points of the laser. These measurements show how much the operating points of the laser have drifted over the period since the last set of measurements, which provide control information to compensate for degradation in the laser.